

*Fundamental Particles and (Potentially Powerful) Structures: A Proposal for Realist Pragmatism*

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*Abstract.* Scientific realism is forcefully challenged in connection with attempts to clarify the precise ontology of the putative subject matter of fundamental physics. How far should the realist go in attempting to describe the natures of, for example, the particles of subatomic physics? Saying too little undermines realism by denuding it, but saying too much holds realism hostage to metaphysical disputes that are significantly removed from the context of physics itself. I take some recent proposals for structural realism in this domain as a case study. On these views, particles are taken to be ontologically dependent, in some way, on structures involving them, which generates certain puzzles concerning the precise ontology of these entities. Assessing each proposal requires that one take a stand on a serious metaphysical challenge, ultimately yielding two options: (1) scepticism regarding the relevant form of structuralism; (2) acceptance of a contentious ontological primitive. I argue that while the choice between these options cannot be forced by physics or metaphysics, agnosticism is nonetheless compatible with scientific realism at a certain level of description, suggesting a more pragmatic attitude towards theorizing at finer-grained levels of analysis.